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Conference Abstract

Workforce Capacity Development and the Digital Extended Specimen

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Abstract

As we look to the future of natural history collections and a global integration of biodiversity data, we are reliant on a diverse workforce with the skills necessary to build, grow, and support the data, tools, and resources of the Digital Extended Specimen (DES; Webster 2019, Lendemer et al. 2020, Hardisty 2020). Future "DES Data Curators" – those who will be charged with maintaining resources created through the DES – will require skills and resources beyond what is currently available to most natural history collections staff. In training the workforce to support the DES we have an opportunity to broaden our community and ensure that, through the expansion of biodiversity data, the workforce landscape itself is diverse, equitable, inclusive, and accessible. A fully-implemented DES will provide training that encapsulates capacity building, skills development, unifying protocols and best practices guidance, and cutting-edge technology that also creates inclusive, equitable, and accessible systems, workflows, and communities. As members of the biodiversity community and the current workforce, we can leverage our knowledge and skills to develop innovative training models that: include a range of educational settings and modalities; address the needs of new communities not currently engaged with digital data; from their onset, provide attribution for past and future work and do not perpetuate the legacy of colonial practices and historic inequalities found in many physical natural history collections.

Recent reports from the Biodiversity Collections Network (BCoN 2019) and the National Academies of Science, Engineering and Medicine (National Academies of Sciences,

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Engineering, and Medicine 2020) specifically address workforce needs in support of the DES. To address workforce training and inclusivity within the context of global data integration, the Alliance for Biodiversity Knowledge included a topic on Workforce capacity development and inclusivity in Phase 2 of the consultation on Converging Digital Specimens and Extended Specimens - Towards a global specification for data integration. Across these efforts, several common themes have emerged relative to workforce training and the DES.

A call for a community needs assessment: As a community, we have several unknowns related to the current collections workforce and training needs. We would benefit from a baseline assessment of collections professionals to define current job responsibilities, demographics, education and training, incentives, compensation, and benefits. This includes an evaluation of current employment prospects and opportunities.

Defined skills and training for the 21st century collections professional: We need to be proactive and define the 21st century workforce skills necessary to support the development and implementation of the DES. When we define the skills and content needs we can create appropriate training opportunities that include scalable materials for capacity building, educational materials that develop relevant skills, unifying protocols across the DES network, and best practices guidance for professionals.

Training for data end-users: We need to train data end-users in biodiversity and data science at all levels of formal and informal education from primary and secondary education through the existing workforce. This includes developing training and educational materials, creating data portals, and building analyses that are inclusive, accessible, and engage the appropriate community of science educators, data scientists, and biodiversity researchers.

Foster a diverse, equitable, inclusive, and accessible and professional workforce: As the DES develops and new tools and resources emerge, we need to be intentional in our commitment to building tools that are accessible and in assuring that access is equitable. This includes establishing best practices to ensure the community providing and accessing data is inclusive and representative of the diverse global community of potential data providers and users. Upfront, we must acknowledge and address issues of historic inequalities and colonial practices and provide appropriate attribution for past and future work while ensuring legal and regulatory compliance. Efforts must include creating transparent linkages among data and the humans that create the data that drives the DES.

In this presentation, we will highlight recommendations for building workforce capacity within the DES that are diverse, inclusive, equitable and accessible, take into account the requirements of the biodiversity science community, and that are flexible to meet the needs of an evolving field.

Keywords

workforce training, extended specimen, digital specimen, digital data

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